Claims

1. An antimicrobial and non-cytotoxic coating material, comprising:

a) a biocide layer containing a biocidic agent, and

b) a transport control layer covering the biocide layer, having a thickness and porosity selected to release an antimicrobial and non-cytotoxic quantity of the active biocidic agent out of the biocide layer and through the transport control layer.

2. A coating material according to claim 1, characterised in that the transport control layer has a gas permeability for oxygen (O_2) in the range between 100 and 1000 (cm^3 bar) / (day m^2), preferably in the range between 500 and 700 (cm^3 bar) / (day m^2).

3. A coating material according to one of claims 1 or 2, wherein the biocidic agent is an inorganic biocide.

4. A coating material according to claim 3, wherein the biocidic agent is selected from the group comprising silver, copper and zinc, their ions and their metal complexes, or a mixture or alloy comprising two or much of said elements.

5 A coating material according to one of claims 3 or 4, wherein the biocidic agent has a mean particle size of 5 – 100 nm.

6. A coating material according to one of the preceding claims, wherein the biocidic layer also includes: gold, platinum, palladium, iridium, tin, antimony, their ions, their metal complexes, or an alloy of the biocidic agent with one or a plurality of said elements.

7. A coating material according to one of the preceding claims, wherein the transport control layer has a substrate material that is selected from the group comprising

a) an organic substrate material, in particular a plasma polymer, a sol-gel, a varnish or lacquer, and a siliconised substrate material, or

b) an inorganic substrate material, in particular SiO_2 and SiC, a metal oxide, in particular TiO_2 and Al_2O_3, and a non-biocidic metal, in particular titanium or medical stainless steel.

8. A coating material according to claim 7, wherein the transport control layer has a silicon content of 20 – 600%, a carbon content of 10 – 30% and an oxygen content of 30 – 50%.

9. A coating material according to one of the preceding claims, wherein the biocidic layer has a mean thickness of 5 – 100 nm.

10. A coating material according to one of the preceding claims, wherein the transport control layer has a mean thickness of 5 – 500 nm.

11. Use of a coating material according to one of claims 1 to 10 for producing an antimicrobial and non-cytotoxic coating on a solid body.

12. Use of a coating material according to one of claims 1 to 10 to produce an antimicrobial and non-cytotoxic coating on a medical product, in particular a catheter, a wound covering, a contact lens, an implant, a medical nail and/or screw, bone fixation nails, a dental implant, a medical instrument, or on a sanitary product, in particular on a sanitary towel or diaper, or on packaging for a medical or sanitary product, or on a component for producing or processing foodstuffs, or on some other product requiring special hygiene precautions.

13. Use of a transport control layer having a gas permeability for oxygen (O_2) in the range between 100 and 1000 (cm^3 bar) / (day m^2), preferably in the range between 500 and 700 (cm^3 bar) / (day m^2), to produce a coating material according to one of claims 1 to 10.

14. Use of a transport control layer having a gas permeability for oxygen (O_2) in the range between 100 and 1000 (cm^3 bar) / (day m^2), preferably in the range between 500 and 700 (cm^3 bar) / (day m2), to cover and/or enclose a biocidic agent in order to enable an antimicrobial and non-cytotoxic quantity of said substance to be released through the transport control layer.